

# RESERVE COPY PATENT SPECIFICATION



Application Date: Nov. 14, 1930. No. 5064/30.

355,365

Complete Accepted: Aug. 27, 1931.

## COMPLETE SPECIFICATION.

Means whereby an Internal Combustion Engine may be used  
Either as a Side-by-side Valve Engine or as an Overhead-  
valve Engine.

We, ROBERT JOHN GREENSLADE, ROBERT  
GEORGE GREENSLADE and ALFRED JOHN  
GREENSLADE, all British Subjects, and all  
of 14, Bond Street, Swansea, Glamorgan,  
do hereby declare the nature of this inven-  
tion and in what manner the same is to  
be performed, to be particularly described  
and ascertained in and by the following  
statement:—

This invention relates to internal com-  
bustion engines of the type which may be  
converted from side valve engines to over-  
head valve engines by changing of a cylin-  
der head.

It has been proposed to construct an  
internal combustion engine of the type  
referred to wherein the valve guides of  
the original side valve engine serve also to  
accommodate the push rods of the over-  
head valve engine and wherein the exist-  
ing side valve ports convey the inlet and  
exhaust gases to the cylinder head of the  
overhead valve engine.

It has also been proposed to construct an  
internal combustion engine of the non-  
convertible overhead valve type wherein  
a pipe is provided leading from the sump  
to the cover enclosing the valve mech-  
anism, through which pipe oil mist is  
caused to rise to lubricate the valve  
mechanism.

According to this invention however, we  
provide an internal combustion engine of  
the type referred to, which, when con-  
verted to an overhead valve engine, com-  
prises valve rocker mechanism adapted to  
be lubricated by oil mist caused to rise  
through a pipe leading from a sump to a  
cover enclosing the said valve rocker  
mechanism.

Our invention will now be described,  
with reference to the annexed drawings,  
wherein:—

Fig. 1 shows an internal combustion  
engine in longitudinal section and

Fig. 2 shows how the engine in Fig. 1  
is converted to an overhead valve engine.

The side-valve water-cooled, internal  
combustion engine shown in Fig. 1 has an  
inlet poppet valve 1 arranged at the side

of the cylinder 2, the valve stem end 3  
being actuated by a vertical tappet rod 4  
moved at the correct instants by virtue of  
its running synchronously with the move-  
ment of the engine piston 5. In this  
engine the sparking plug 6 is arranged  
in the cylinder head 8 just above the inlet  
valve 1, the mixture for firing being in-  
troduced at the correct time by its pass-  
ing to the combustion space from the  
inlet passage 7 beneath the valve head,  
communicating with the induction pipe.  
9 is the valve guide and 10 the water  
jacket. The exhaust valve is arranged in  
similar manner and in close proximity to  
the inlet valve.

Fig. 2 shows how this engine is con-  
verted to an engine having both inlet  
and exhaust valves in the cylinder head.  
Similar parts in Figs. 1 and 2 have been  
numbered to agree. The new cylinder  
head 11 has a sparking plug 6 screwed  
into its side. The overhead inlet valve  
1 passes through a valve guide 12 and is  
actuated by a rocker 13 pivotally arranged  
on a shaft 14 mounted in a split bearing  
15, held together by studs 15<sup>a</sup>—15<sup>b</sup>. Bear-  
ing 15 is carried by a bracket 16 fixed to  
the cylinder head. The rocker 13 is moved  
by means of a rocker rod 17 which passes  
through a guide 18 and is actuated from  
the tappet rod 4 by means of a push rod  
19 having an enlarged end 20. A screwed  
tip 21 is provided on the end of rod 17  
and is locked thereto by means of the lock  
nut 22. The exhaust valve is arranged  
similarly to the inlet valve the shaft 14  
serving to support also the rocker for the  
same. The combustible mixture in pass-  
ing to the combustion space in the engine  
cylinder, passes from the induction pipe  
through the hole 23 formerly used for  
receiving the head of the old side inlet  
valve and then following the rod 17 up-  
wardly to the point in the cylinder head  
where the inlet push rod guide 18 is  
located, goes through a conduit 24 in the  
cylinder head (positioned beneath the in-  
let rocker bracket 16) leading to the stem  
side of the inlet valve 1. A similar

55

60

65

70

75

80

85

90

95

100

arrangement enables the exhaust gases to find their way from the cylinder head to the exhaust pipe through the hole formerly used for receiving the head of the old side exhaust valve.

A cover 25 is secured firmly to the cylinder head and encloses the valve rocker mechanism.

A pipe 26, leading from the sump up to and through the said cover, serves to lubricate the valve rocker mechanism. The crankcase breather is closed, and the pressure produced on descent of the pistons will cause oil mist to rise up the said pipe.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. An internal combustion engine of the type referred to, which, when converted to an overhead valve engine, comprises valve rocker mechanism adapted to be lubricated by oil mist caused to rise through a pipe leading from a sump to a cover enclosing the said valve rocker mechanism.

2. An internal combustion engine of the type referred to substantially as herein described with reference to the accompanying drawings.

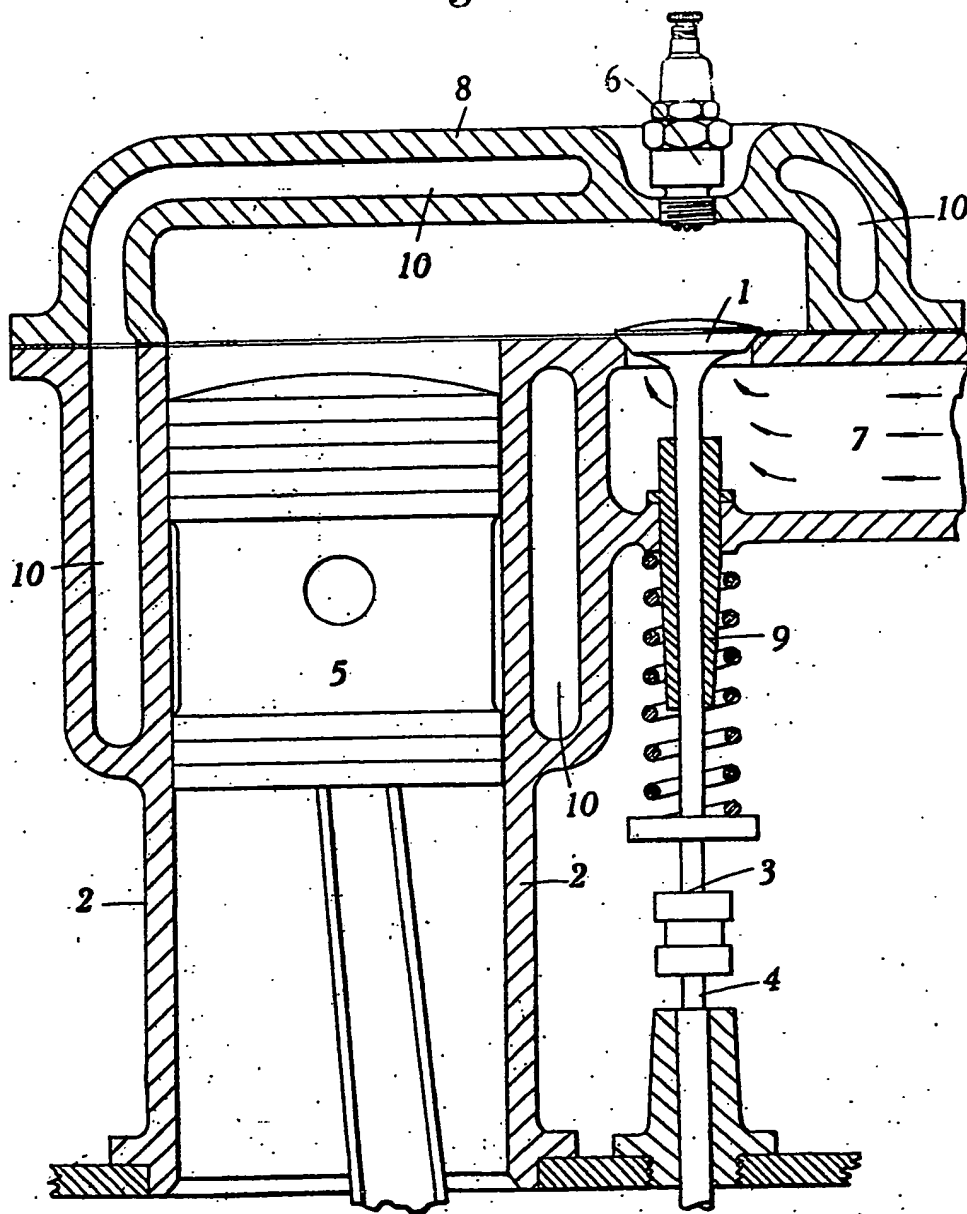
Dated this 14th day of November, 1930.

For the Applicants,

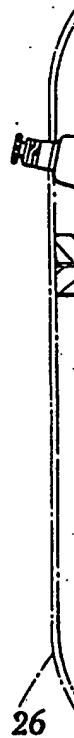
STANLEY POPPLEWELL &  
FRANCIS,

Chartered Patent Agents,  
Jessel Chambers, 88/90, Chancery Lane,  
London, W.C. 2.

Fig. 1.



*[This Drawing is a reproduction of the Original on a reduced scale.]*



*Fig. 2.*

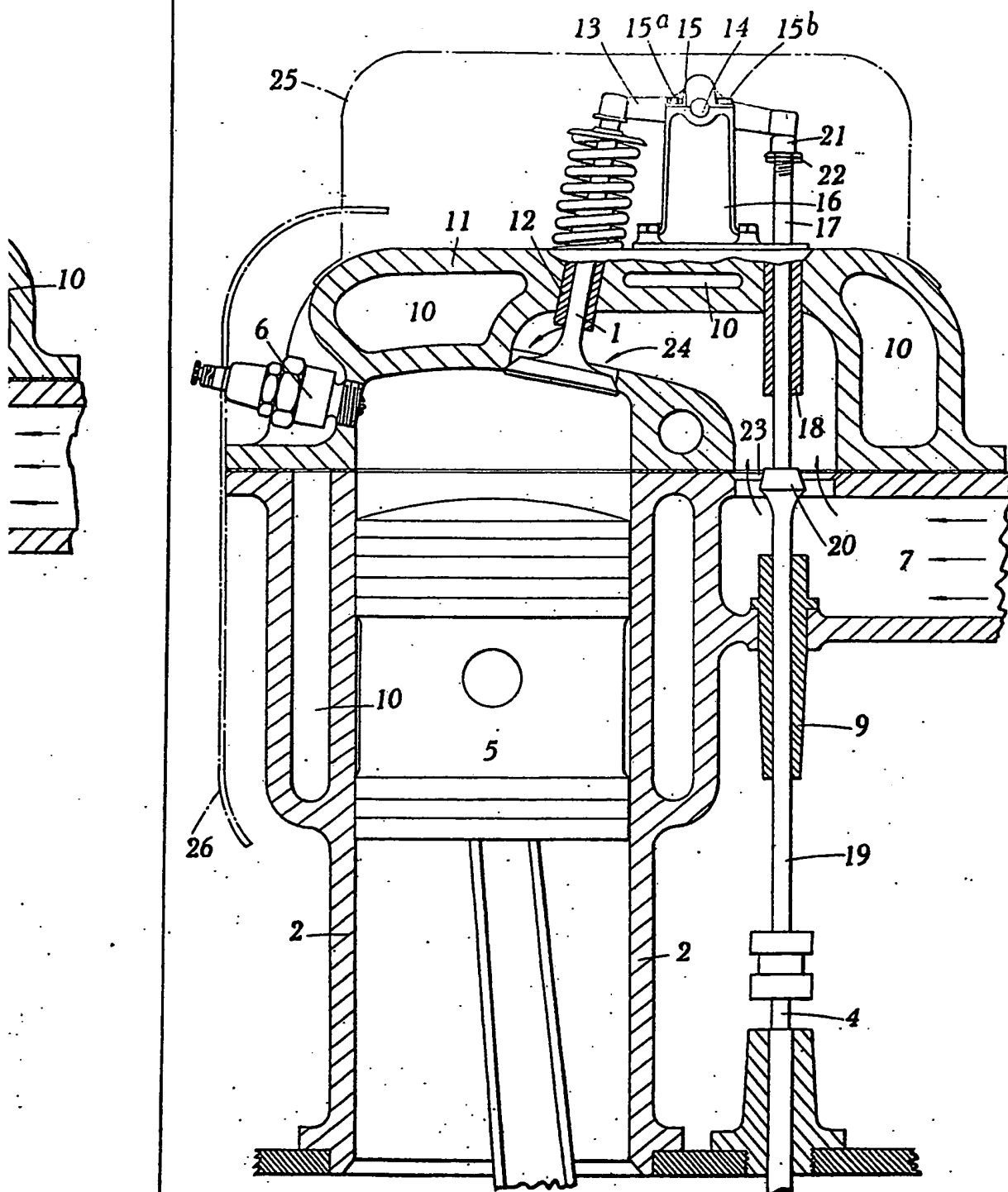


Fig. 1.

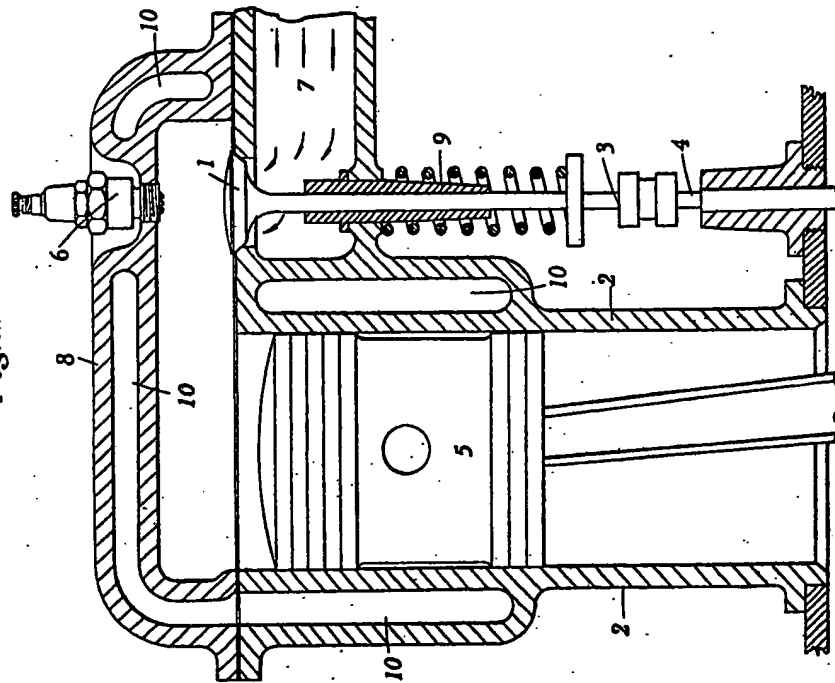


Fig. 2.

